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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,093	01/16/2002	Ken-Ichiro Mori	1232-4793	9864

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EXAMINER

MATHEWS, ALAN A

ART UNIT PAPER NUMBER

2851

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/052,093

Examiner

Alan A. Mathews

Applicant(s)

MORI, KEN-ICHIRO

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-- The MAILING DATE of this communicati n appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-4 and 6-13 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 8, line 8, and claim 9, lines 7 and 8, “the angular shift a light source” is apparently missing a word or some words between “shift” and “a light source”.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1, 2, 8, 9, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the Japanese patent document 11-145,033 (cited on Applicant's PTO-1449). The Japanese patent document 11-145,033 discloses in figures 1 and 2 an exposure apparatus including a **correction apparatus 35** for correcting a shift between an optical axis in optical unit 32 (which includes a laser light source 33) and optical unit 4. Mirror 36 with x axis actuator 39 and Y axis actuator 38 is the angular corrector for correcting the angular shift. Elements 40 and 42 are the converter for converting a positional shift. With respect to claims 8 and 9, figure 1 discloses the exposing chamber 4 which includes an optical system (including projection optical system 12) for projecting a pattern on reticle 13 onto an object W (wafer).

5. Claims 1-4 and 6-13 are rejected under 35 U.S.C. 102(a) as being anticipated by the Japanese patent document 2000-77315 (cited on Applicant's PTO-1449). The Japanese patent document 2000-77315 discloses in figures 1 and 2 an exposure apparatus including optical axis compensating systems 23 and 24 for correcting a shift between an optical unit which encloses the light source 12 and the optical unit 11. Mirror 23 with X axis actuator 42 and Y axis actuator 43 (for tilting) is the angular corrector for correcting the angular shift. Elements 24X and 24Y comprise the converter for converting a positional shift. With respect to claims 3, 10, and 13, figure 1 discloses a second angular corrector 31 (a mirror similar to 23) for correcting an angular shift. With respect to claims 8 - 13, figure 1 discloses the exposing chamber 11 which includes an optical system (including projection optical system 14) for projecting a pattern on reticle R onto an object W (wafer). With respect to claim 6, element 29 is a first detector for detecting the

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angular shift and element 37 is a second detector for detecting an angular shift. Element 20 is a control unit.

6. Claims 1, 2, 8, 9, 11, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsuji et al. (U. S. Patent No. 6,542,222). Tsuji et al. discloses in figure 2 an exposure apparatus with one unit 1 with a light source and a second unit 33. Tsuji et al. discloses in figure 2 and column 13, lines 55-67, mirrors 39 and mirror M with positions 41B and 41 C to change the angle of inclination of the mirror. Mirror 39 is the angular corrector for correcting the angular shift. Mirror M is the converter for converting a positional shift. With respect to claims 8, 9, 11, and 12, figure 2 discloses projecting a pattern from reticle 11 onto wafer 14.

Allowable Subject Matter

7. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for the indicated allowability of claim 5 is as follows:

The prior art of record does not disclose or suggest at least one of the first and second angular correctors comprising an optical member using total reflection utilizing a difference between refractive indexes, and a tilting mechanism for tilting the optical member with respect to one of the optical axis in combination with the other elements in the parent claims of dependent claim 5

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents on Applicant's PTO 1449 are cited for the same reasons Applicant cited them in his INFORMATION DISCLOSURE STATEMENT. The Patent Application Publication 2002/0001134 A1 is cited to show the U. S. equivalent to the Japanese patent document 2001-264695 cited on Applicant's PTO-1449. The patent to Tunitsu et al. (U. S. Patent No. 5,963,306) is cited to show a misalignment d in figure 3. The patent to Takahashi et al. (U. S. Patent No. 6,008,885) is cited to show separate illumination and exposure units. The patent to Kondo is cited to show beam matching unit BMU (see figure 4 and column 18, lines 33-40). The patent to Tegreene is cited to show a correction mirror 100 in figure 8.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (703) 308-1706. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on (703) 308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in cursive script that reads "Alan A. Mathews".

Alan A. Mathews
Primary Examiner
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AAM